



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,065	11/14/2003	Ryohei Tarumi	Q78444	9048

7590 04/25/2005  
SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037-3213

EXAMINER
----------

NOORI, MAX H

ART UNIT	PAPER NUMBER
----------	--------------

2855

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/712,065

Applicant(s)

TARUMI, RYOHEI

Examiner

Lilybett Martir

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 15-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2,5-6 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holroyd (Pat. 5,014,547) in view of Sheifert (Derwent DD 153231A).

- With respect to claim 1, Holroyd teaches a vibration detector (acoustic emission transducer) as in element 42 which is joined with said fixed member 32 and detects a vibration in abrasion of said material 10 with said fixed member 32; and a calculation device 46. Holroyd fails to specifically teach said calculating device being used to calculate the friction force between said fixed member and said material that is a magnetic tape based on a signal from said detector. Sheifert teaches that the utilization of friction measuring means to determine the frictional characteristics of magnetic tape is well known and expected in the art (See abstract, and Page 5 of Translation, paragraph under "Characteristics of the Invention"). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the surface roughness determining apparatus of Holroyd utilizing the teachings of the frictional characteristics measuring

device of Sheifed by utilizing said apparatus to monitor the friction of magnetic tape to further make said device versatile.

- With respect to claim 2, Holroyd teaches a vibration input unit (acoustic emission transducer) as in element 42 in which vibration of said vibration detector is input is directly contacted with said fixed member 32 as noted in Figure 1.
- With respect to claim 5-6, Holroyd teaches wherein a recording device as in element 48 capable of recording friction force calculations and the time associated with them.
- With respect to claims 8-10, Holroyd fails to teach said fixed member being specifically a magnetic head. Sheifert teaches that the utilization of friction measuring means in a magnetic head 7 to determine the frictional characteristics of magnetic tape is well known and expected in the art (See abstract, and Pages 5-6 of Translation, paragraph under "Characteristics of the Invention").
- With respect to claim 11-13, Holroyd teaches said vibration detector is an acoustic emission sensor as in element 42 (Col. 3, lines 37-42).

3. Claims 3-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holroyd in view of Sheifert as applied to claim 1 above, and further in view of Tcheng et al. (Pat. 4,836,035).

- With respect to claims 3-4, Holroyd does not teach providing a low pass filter of which cutoff frequency is not less than 50 kHz is equipped

between said vibration detector and said calculation device. Tcheng et al. teaches a friction-monitoring device that comprises a low-pass filter. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teachings of the surface roughness determining apparatus of Holroyd as modified by Sheifert utilizing the teachings of the frictional monitoring device of Tcheng et al. by providing it with a low-pass filter that further reduces noise (Col. 6, lines 8-9) and makes the desired measurements more accurate.

- With respect to claim 7, Holroyd teaches a recording device recording friction force as in element 48.

#### ***Allowable Subject Matter***

4. Claims 15-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, or if the limitations in said claims are introduced in the independent claim including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

5. Applicant's arguments filed December 15, 2004 have been fully considered but they are not persuasive. In response to applicants arguments stating that the surface roughness and the frictional force in said surface are not the same, Holroyd himself explains in his Abstract that his roughness of a material observations are made based

Art Unit: 2855

on the waves caused by frictional forces. One of ordinary skill in the art clearly recognizes the close relationship between friction in a surface and the roughness of it.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

7. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilybett Martir whose telephone number is (571)272-2182. The examiner can normally be reached on 9:00 AM to 5:30 PM.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Noori can be reached on (571)272-2185. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2855

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*LM*

Lilybett Martir  
Examiner  
Art Unit 2855

*LM*



**MAX NOORI**  
**PRIMARY EXAMINER**